

WHAT IS CLAIMED IS:

1. An image sensing apparatus comprising:
 - an image sensing element having
 - a photoelectric conversion portion at which a
 - 5 plurality of photoelectric conversion elements are
 - two-dimensionally arrayed,
 - vertical transfer portions which vertically
 - transfer signal charges stored in the photoelectric
 - conversion portion in accordance with a vertical
 - 10 transfer pulse,
 - a horizontal transfer portion which horizontally
 - transfers signal charges transferred from the vertical
 - transfer portions in accordance with a horizontal
 - transfer pulse, and
 - 15 a charge detection portion which converts signal
 - charges transferred from the horizontal transfer
 - portion into a signal voltage or a signal current;
 - a switch which inputs a reference voltage from a
 - reference power supply; and
 - 20 a driving circuit which, while signal charges are
 - stored in the photoelectric conversion portion, stops
 - the horizontal transfer portion, drains unnecessary
 - charges generated at the vertical transfer portions of
 - said image sensing element, inputs to one terminal of a
 - 25 capacitor a reset voltage that resets the charge
 - detection portion, and inputs the reference voltage
 - from the reference power supply to the other terminal

of the capacitor by controlling said switch,

wherein the charge detection portion and said switch are arranged at the two terminals of the capacitor.

- 5 2. The apparatus according to claim 1, wherein
a horizontal drain which drains unnecessary charges is arranged adjacent to the horizontal transfer portion in a vertical direction of the horizontal transfer portion, and

10 when unnecessary charges generated at the vertical transfer portions of said image sensing element reaches a predetermined amount at the horizontal transfer portion, unnecessary charges are drained to the horizontal drain.

- 15 3. The apparatus according to claim 1, wherein while signal charges are stored in the photoelectric conversion portion, the vertical transfer portions are driven at high speed to drain unnecessary charges generated at the vertical transfer portions of said
20 image sensing element.

4. The apparatus according to claim 1, wherein while signal charges are stored in the photoelectric conversion portion, potentials of the vertical transfer portions are set to the same
25 potential to drain unnecessary charges generated at the vertical transfer portions of said image sensing element.